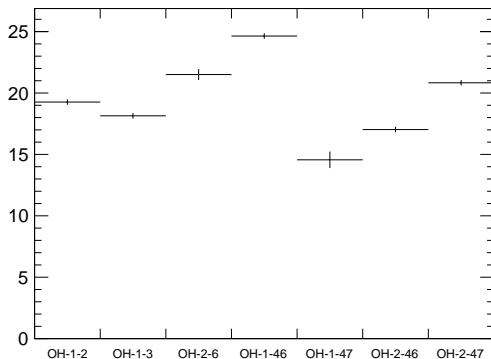
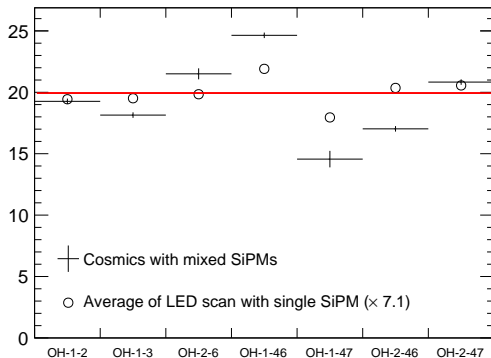


Reminder: gain corrected cosmics



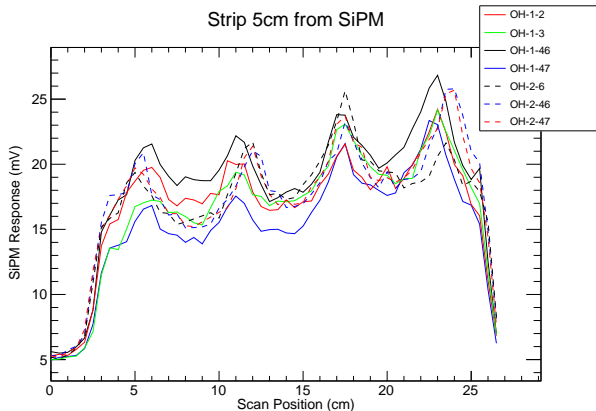
- March cosmics results, scaled up by 2.24—“gain correction”
- Average is about 20 PE, consistent with our October outer HCal cosmics test
- Can do unwrapped cosmics as one last check on variation

Understanding the variation



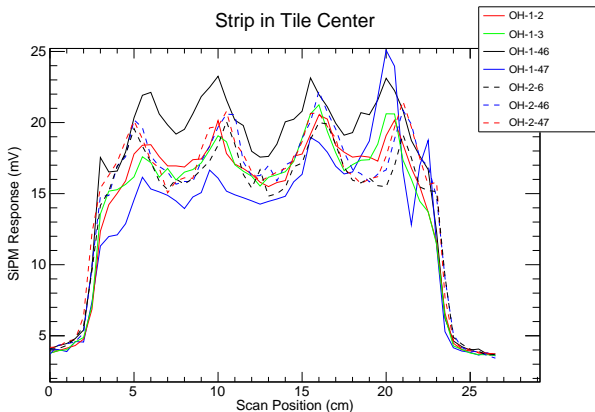
- We redid the LED scans using a single SiPM (3168) for each tile
- Nearly all the variation we saw earlier was due to the different SiPMs we used

1d projections of the scans



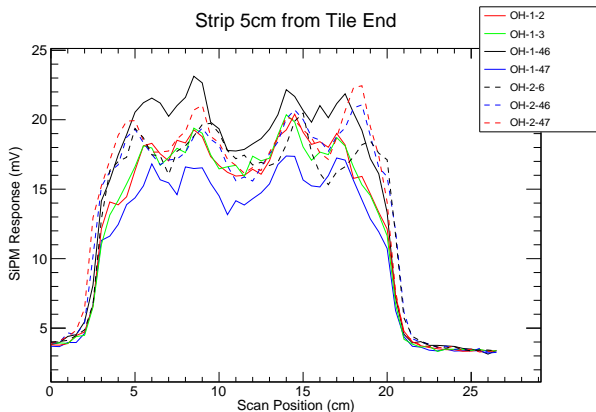
- The good agreement between tiles can be seen very well in the 1d projections

1d projections of the scans



- The good agreement between tiles can be seen very well in the 1d projections

1d projections of the scans



- The good agreement between tiles can be seen very well in the 1d projections



SiPM shipments

- We classify our received SiPM shipments into 3 groups

Group	Shipment date	Notes
A	July 2015	matched pair for dual readout rectangular test panel
B	October 2015	3 SiPMs mounted, 1 outer and 2 inner HCal tiles
C	March 2016	5 SiPMs unmounted, 7 outer HCal tiles

- SiPM inventory

Group	Model number	Serial number	Gain
A	S12572-025P	2116	5.14E5
A	S12572-025P	2120	5.15E5
B	S12572-025P	3168	5.15E5
B	S12572-025P	3172	5.16E5
B	S12572-025P	3173	5.15E5
C	S12572-015P	927	2.32E5
C	S12572-015P	965	2.28E5
C	S12572-015P	972	2.29E5
C	S12572-015P	973	2.32E5
C	S12572-015P	992	2.31E5

- Gain on -015P is a factor of 2.24 lower than -025P
- Gain variation at the sub-percent level when operating at spec'd voltage